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Draft Removal Action Workplan for Former McDonnell Douglas Alpha/IOC-1 Study Area, Inactive Rancho Cordova Test Site, Rancho Cordova, California

Fact Sheet

September 2001



Introduction

This fact sheet provides information regarding the California Environmental Protection Agency Department of Toxic Substances Control's (DTSC) proposed interim removal action and treatability study for **volatile organic compounds (VOC)** in soils at the Alpha/IOC-1 Study Area of the Inactive Rancho Cordova Test Site (IRCTS). The Alpha/IOC-1 Study Area (Alpha Area) is in the southeastern section of the IRCTS. The IRCTS is located approximately 15 miles east of Sacramento in a rural area south of Rancho Cordova, California (see Figures 1 and 2).

Under DTSC's oversight, the Boeing Company has prepared a **draft Removal Action Workplan (RAW)** that describes the proposed removal action and treatability study. The removal is designed as a treatability study to test whether **soil vapor extraction (SVE)** will clean up VOC-impacted soils at the Alpha Area.

DTSC has proposed a **California Environmental Quality Act (CEQA)** Categorical Exemption (proposed CEQA Notice of Exemption). DTSC has determined that the removal action qualifies for the exemption as an "Information Collection" project.

The fact sheet also provides information on the Alpha Area history, background, public involvement, information repositories, contacts for additional information and the IRCTS mailing list. Terms highlighted in **bold italics** are defined in the glossary.

Notice of a Public Comment Period and Public Meeting

For the Draft Removal Action Workplan for TCE in soil vapor at the Alpha/IOC-1 Study Area of the Inactive Rancho Cordova Test Site in Sacramento County, California

The public comment period will be from September 27 to October 26, 2001.

The public meeting will be Thursday, October 4, 2001 7:00 p.m.
W.E. Mitchell
Middle School Library,
2100 Zinfandel Drive,
Rancho Cordova, CA 95670

Site History and Background

The Alpha Area occupies about 45 acres within the southeastern section of the IRCTS and was formerly used by the McDonnell Douglas Corporation (McDonnell Douglas Corporation is a wholly owned sub-

siary of The Boeing Company since 1998) for aerospace-testing programs from 1956 through 1969. During this period McDonnell Douglas constructed various buildings and facilities for the Thor missile system and Saturn rocket testing program. Test Stand 1 and

Test Stand 2 are the two major structures at Alpha Area. A steel deflector plate, concrete apron, and 150,000-gallon concrete water storage basin were located at the base of each test stand. In support of these programs, various chemical substances such as **trichloroethylene (TCE)** and **1,1,2-trichloro-1,2,2-trifluoromethane (Freon-113)** were used as cleaning agents. Other VOCs have been detected at the site including **tetrachloroethylene (PCE)** and **methylene chloride**.

From 1969 to 1976, the IRCTS was inactive, and then from 1976 to 1981, McDonnell Douglas leased portions of the Alpha Area to Kinetech Corporation for the production and testing of devices for increasing well water production. In 1984, the Aerojet General Corporation (Aerojet) bought the IRCTS except for the parcels that had been sold in the Administration Area. The Alpha Area is not in use at this time.

In 1988, TCE was detected in the Sacramento County Recycle Road Well, #18 (Recycle Road Well), just west and downgradient of the IRCTS. In response, DTSC issued an Imminent and Substantial Endangerment and Remedial Action Order in 1991 requiring McDonnell-Douglas and Aerojet to investigate and remediate soil and groundwater on the IRCTS. The Recycle Road well is no longer in use. The

1991 Order was subsequently replaced by a 1994 Final Imminent and Substantial Determination and Consent Order that further clarified regulatory requirements. Under these orders, Boeing has conducted a Remedial Investigation to determine the nature and extent of the impacts at the Alpha Area.

Remedial Investigation

Starting in 1983 and continuing into 2001, numerous investigations have been conducted to assess the extent of various chemicals that have been released to soil and groundwater at the Alpha Area. During these remedial investigations, soil borings, *soil vapor* monitoring and extraction wells, and groundwater monitoring wells were installed within the Alpha Area. Soil, sediment, soil vapor, and groundwater samples were collected for chemical analysis of *VOCs*, perchlorate, metals, polychlorinated bi-

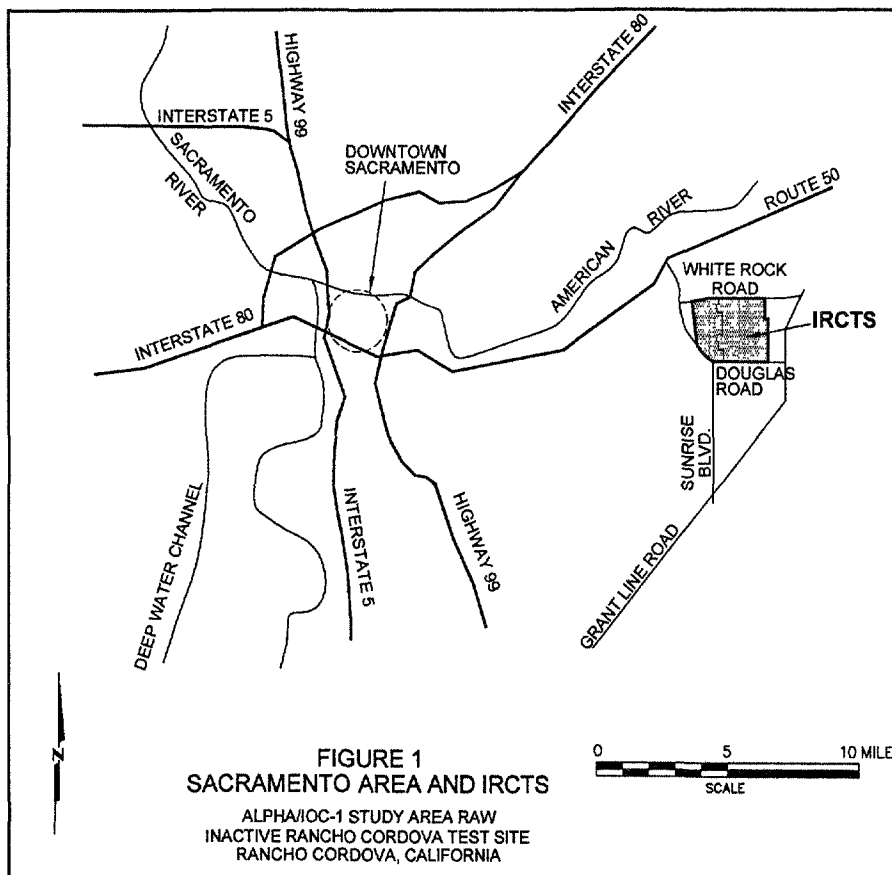
phenyls, and *semi-volatile organic compounds (SVOCs)*. VOCs were the most frequently detected contaminant in the soil, soil vapor, **perched**, and regional groundwater samples collected, and are the focus of the draft RAW. Other chemicals will be addressed in a Remedial Investigation report once the remedial investigation is complete.

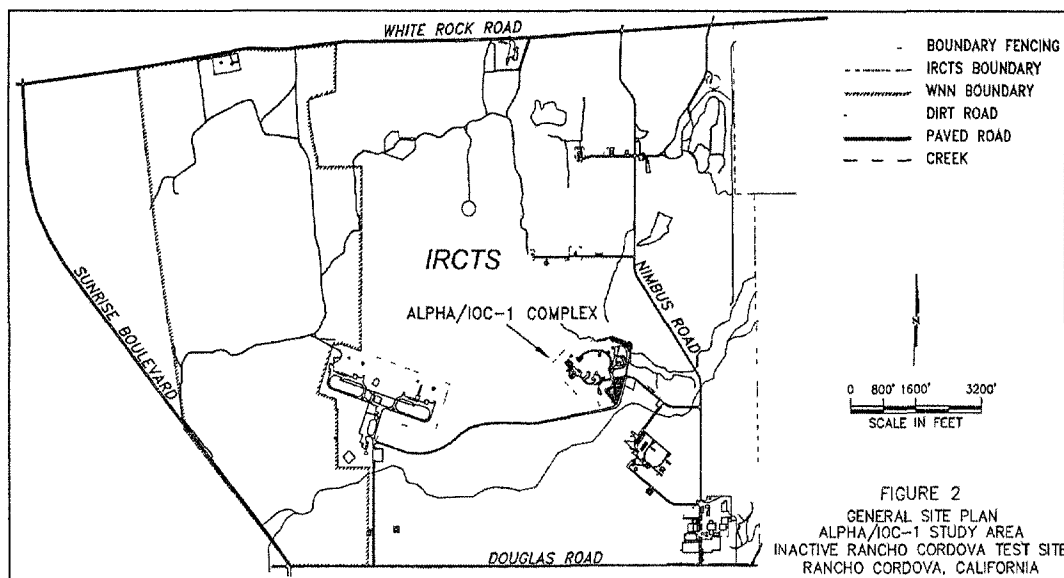
Analytical results for the soil and soil vapor samples show that TCE, methylene chloride, PCE, Freon 113, *cis-1,2-dichloroethene (cis-1,2-DCE)*, and kerosene are present in the soil and soil vapor. Kerosene and TCE were detected in soil samples at concentrations up to 5,070 parts per million (ppm) and 53.8 ppm, respectively. TCE has been reported above the detection limit in 69% of the soil vapor samples at concentrations ranging from 0.003 to 17,000 micrograms per liter ($\mu\text{g/l}$).

TCE was detected at concentrations up to 5,550 parts per billion (ppb) in perched water samples, and was the most prevalent compound reported above the *maximum contaminant level (MCL)*. Other VOC concentrations exceeded the MCL, including *cis-1,2-DCE* (74.4 ppb) and PCE (1,460 ppb).

Interim Removal Action

For the Alpha Area, Boeing will initiate an interim removal action and treatability study to reduce the concentration of VOCs in the soils. This reduction will lessen the potential for their migration into the groundwater, and test the viability of SVE to remediate VOC contamination over time. DTSC proposes this draft RAW to start the construction of an SVE system consisting of 14 soil vapor extraction wells (Figure 3) and two treatment





systems using *thermal or catalytic oxidation* and *carbon adsorption*. Additional wells may be added in the future based on the performance of the initial wells.

Draft Removal Action Workplan

How was the plan developed?

Prior to the development of the draft RAW, two soil vapor extraction pilot tests were conducted near Test Stands 1 and 2. These tests indicated that SVE might be a viable approach for removal of VOC contamination in soils beneath the Alpha Area. Data collected during the pilot tests will be used to design the larger treatability study system. The draft RAW evaluates other possible remedial options and their overall effectiveness at removing VOCs from soil. A detailed analysis of each treatment alternative is contained in the draft RAW.

These potential remedial alternatives were evaluated using the nine federal criteria as modified for the State of California. The criteria include:

- Protection of human health and the environment;

- Compliance with applicable, or relevant and appropriate regulations and requirements;
- Long-term effectiveness and permanence;
- Reduction in toxicity, mobility, and volume of contaminants through treatment;
- Short-term effectiveness;
- Implementability;
- Cost;
- Community acceptance; and
- State acceptance.

SVE was selected as the most feasible interim remedial alternative for mitigation of VOC-impacted soils beneath the Alpha Area. This method could significantly reduce the cost associated with the cleanup operations and provide the least potential human health risk.

Based on the evaluation in the draft RAW, and on current and future land uses, SVE was selected as the most promising alternative for the Alpha Area.

What is being proposed?

The proposed alternative for VOC-impacted soil is operation of a SVE system utilizing a catalytic oxidation unit as well as a portable, carbon adsorption unit. The treated vapors will be discharged under air permits from the Sacramento Metropolitan Air Quality Management District. Operation of the SVE system will continue until the criteria listed in the draft RAW are met. The criteria include: 1) contaminant extraction rates of less than 1-2 pounds per day, 2) stable (low) contaminant concentrations in soil vapor, and 3) stable (low) groundwater contaminant concentrations.

When will the work occur?

DTSC anticipates that the VOC-impacted soil remediation will be completed within one to two years after the final RAW is approved by the DTSC.

Public Involvement

The draft RAW and proposed CEQA Notice of Exemption are subject to public review and

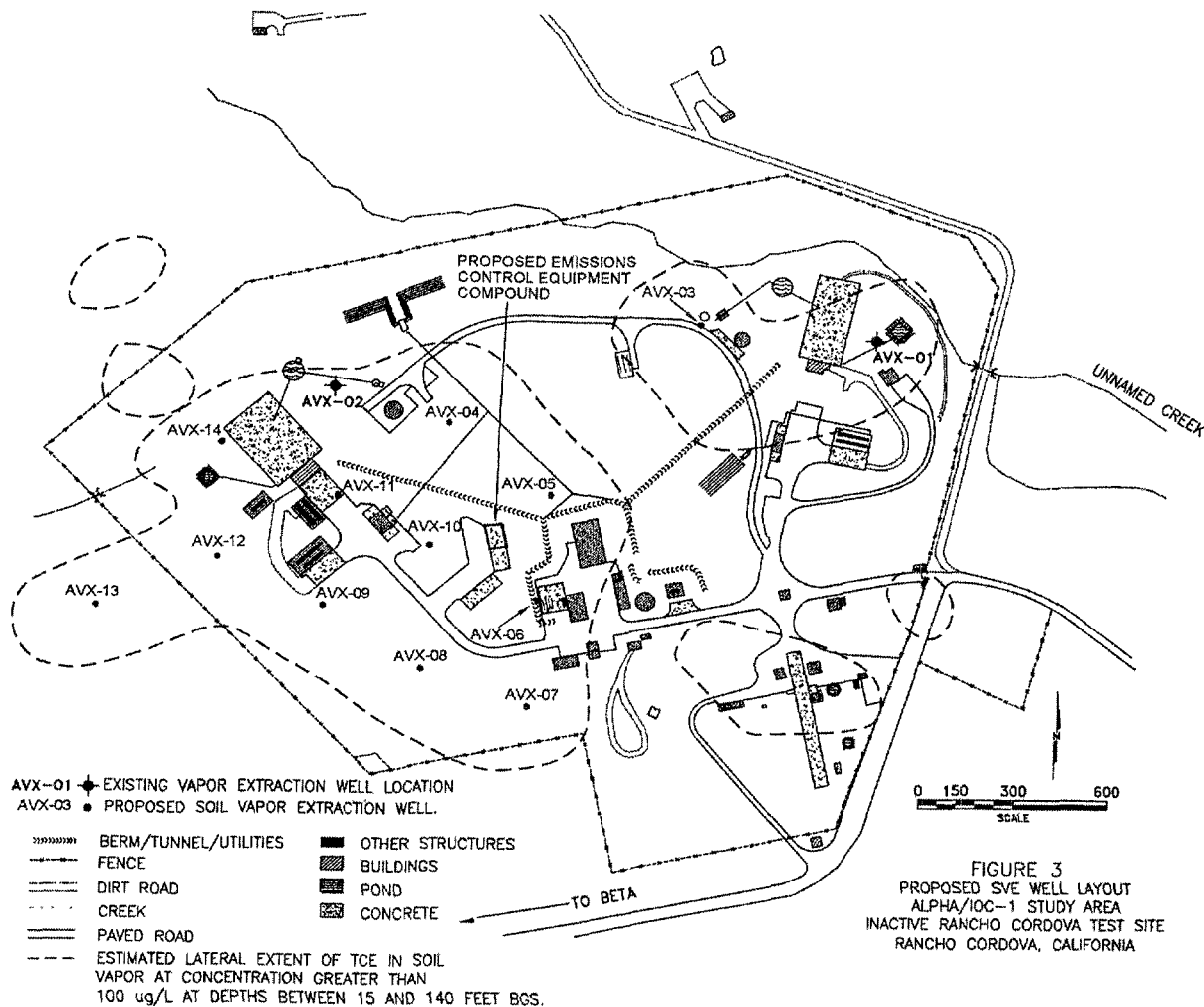


FIGURE 3
 PROPOSED SVE WELL LAYOUT
 ALPHA/IOC-1 STUDY AREA
 INACTIVE RANCHO CORDOVA TEST SITE
 RANCHO CORDOVA, CALIFORNIA

comment. The public comment period begins on September 27, 2001, and ends October 26, 2001. Written comments must be delivered or postmarked by October 26, 2001. Documents are available for public review at the information repositories listed on page 5. Written comments should be sent to:

Gene Riddle
 Project Manager, DTSC
 8800 Cal Center Drive
 Sacramento, California
 95826-3200

Oral or written comments may also be submitted at the public meeting to be held on October 4, 2001 at 7:00 p.m. in the W.E. Mitchell Middle School Library in Rancho

Cordova, California. Before the draft RAW is finalized, DTSC will review and respond in writing to all comments.

Future Actions

DTSC, Aerojet, and Boeing plan to conduct an investigation of the soil and groundwater contamination present in the Alpha Area. Other contaminants found will be dealt with after the investigation has been completed. DTSC expects the investigation to be complete by July 2002.

CEQA Categorical Exemption

DTSC proposes that this action qualifies for a Categorical Exemption ("Information Collec-

tion") because it is a treatability study to test the viability of SVE for the remediation of VOC-impacted soils at the Alpha Area over time.

Information Repository

You may review a copy of the draft RAW, the proposed CEQA Notice of Exemption, the PPP, and other related documents at the following information repository:

**DTSC, Sacramento
Office File Room
8800 Cal Center Drive
Sacramento, CA 95826-3200
Contact: Alberta McMurray
(916) 255-3758**

Information Contacts

If you need additional information or have questions, please contact:

**Nathan Schumacher,
Public Participation Specialist
at (916) 255-3650
email: nschumac@dtsc.ca.gov**

or

**Gene Riddle, Project Manager
at (916) 255-3601
email: griddle@dtsc.ca.gov**

Members of the media, please contact Ron Baker at (916) 324-3142.

Notice to Hearing Impaired Individuals:

TDD users can obtain additional information about this factsheet by using the California State Relay Service (1-888-877-5378) and asking to reach Nathan Schumacher at (916) 255-3650.

Glossary of Terms

California Environmental Quality Act (CEQA): A state law mandating environmental impact review of governmental actions in California. The Act applies generally to all activities undertaken by state and local agencies, and to private activities financed, regulated, or approved by state and local agencies.

Carbon adsorption: A treatment system in which VOCs are removed from soil vapor by forcing the vapor through tanks containing activated carbon, a specially treated material that attracts and retains the VOCs.

Cis-1,2-dichloroethylene (DCE): Breakdown product from natural degradation of TCE.

Draft Removal Action Workplan (RAW): Summary report describing a proposed interim action for the remediation of contaminants in the environment at a particular site.

Maximum Contaminant Level (MCL): A contaminant level for drinking water, established by the California Department of Health Services, Division of Drinking Water and Environmental Management, or by the U.S. Environmental Protection Agency. These levels are legally enforceable standards which are based on health risk (primary standards) or non-health concerns such as odor or taste (secondary standards).

Perched Groundwater: Groundwater that accumulates beneath the earth's surface but above the main water bearing zone (or aquifer). Typically, perched groundwater occurs when a limited zone (or lens) of harder, less permeable soil is "perched" in otherwise porous soils. Rainwater moving downward through the soil stops at the lens, creating saturated soil conditions,

then may seep downward toward the aquifer.

Semi-volatile organic compounds (SVOCs): Chemical compounds used in industrial operations. They range from substances that can evaporate under certain conditions to substances that are present in solid form at normal temperatures. Polynuclear aromatic hydrocarbons (PAHs) are examples of SVOCs.

Soil vapor: Gases such as air and methane that fill the open spaces between soil particles.

Soil vapor extraction (SVE): A process in which a vacuum is used to pull vapors from the soil. It is used for VOC removal from soil.

Thermal or catalytic oxidation: Thermal oxidation is a process by which VOCs from an SVE system are destroyed through combustion under high temperatures. The catalytic oxidation process uses a bed of metal packing or other chemically active materials to facilitate destruction of VOCs, at much lower temperatures (less energy usage) compared to thermal combustion.

Trichloroethene (TCE), tetrachloroethene (PCE), methylene chloride, and 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113): VOCs used as degreasing chemicals at the Alpha Area. TCE is the most prevalent soil vapor contaminant in the Alpha Area. It is known to cause cancer and is the most commonly found industrial chemical in groundwater in the United States. It has generally been used in the past by industry as a cleaning agent for parts degreasing.

Volatile organic compounds (VOCs): These substances include solvents and other compounds that readily evaporate at normal temperatures. Gasoline is an example of a VOC.